

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.04.93

Test oil : ISO 4113

Combination No. : 0402646970

## Injection pump

Pump designation : PE6P120A320RS7248Y

EP type number : 0412626863

## Governor

Governer design. : RQV275...1150PA986

Governer no. : 0421813920

Cust. part No. : 1248046

## Customer-spec. information

Customer : DAF

Motor : RS 180 L

Power KW : 180.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

### Overflow quantity

min. l/h : 130

Tolerance l/h : ± 10.0

### Test nozzle holde assembly

: 1688901105

### Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1680750089

A01

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75

Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.5

Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1340

Rack travel in mm : 9.70  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

rack travel mm : 9.70  
Rated speed rpm : 1185  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

##### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 6.70

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
rack travel mm : 10.75  
Tolerance mm : ± 0.05

##### MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 9.50



Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 600  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

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#### FUEL DELIVERY CHARACTERISTICS

Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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#### BREAKAWAY

Rack travel in mm : 9.70  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  5

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#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.93  
Test oil : ISO 4113

Combination No. : 0402646994

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/950PA1032-3  
Governor no. : 0421801654

Cust. part No. : 0230744202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.16  
Tolerance mm : ± 0.10

Rated speed rpm : 1009  
guide sleeve  
travel mm : 6.52  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 401  
guide sleeve  
travel mm : 4.53  
Tolerance mm : ± 0.10

Rated speed rpm : 500

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guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

rack travel mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.30

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### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

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### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Rated speed rpm : 400

rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.15

rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.10

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### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm3/1000 strokes : 230.0  
Tolerance  
cm3/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm3/1000S. :  $\pm$  5.0  
Spreed

Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. :  $\pm$  12.0

Rated speed rpm : 400  
Del. quantity  
cm3/1000 strokes : 204.5  
Tolerance  
cm3/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm3/1000S. :  $\pm$  4.5

Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 133.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

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### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

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### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm3/1000 strokes : 65.0  
Tolerance  
cm3/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm3/1000S. :  $\pm$  19.0

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### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 19.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94

Test oil : ISO 4113

Combination No. : 0402646969

## Injection pump

Pump designation : PE6P120A32ORS7248

: -10Z

EP type number : 0412626901

## Governor

Governer design. : RQV275...1150PA986

Governer no. : 0421813920

Cust. part No. : 1248041/4

## Customer-spec. information

Customer : DAF

Motor : RS 200 L

Power KW : 200.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

### Overflow quantity

min. l/h : 130

Tolerance l/h : ± 10.0

### Test nozzle holde

assembly : 1688901105

### Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.35

Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1335

Rack travel in mm : 10.30  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

rack travel mm : 10.30  
Rated speed rpm : 1185  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1290  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

##### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

##### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
rack travel mm : 11.30  
Tolerance mm : ± 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 600  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 9.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 9.70  
Tolerance mm :  $\pm$  0.10

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## FUEL DELIVERY CHARACTERISTICS

Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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## BREAKAWAY

Rack travel in mm : 10.30  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  5

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## LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.04.94  
Test oil : ISO 4113

Combination No. : 0402646793A

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1030-8  
Governor no. : 0421801673

Cust. part No. : 0230749502

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 213.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.35  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.58  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.37  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 394

guide sleeve  
travel mm : 4.78  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 480  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 93.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.35  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.00

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 400  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 11.35  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.09.94  
Test oil : ISO 4113

Combination No. : 0400874255

Injection pump  
Pump designation : PES4A95D410RS2685  
EP type number : 0410894996

Governor  
Governor design. : RSV400...1000A1C2278  
: L  
Governor no. : 0420232602

Cust. part No. : 9275740

Customer-spec. information  
Customer : LIEBHERR  
Motor : D904 T  
Power KW : 96.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 2.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.  
mm : 9.00  
Tolerance mm : ± 0.50  
Difference ° CS : 4.50  
Tolerance : ± 0.50

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

2nd speed rpm : 400

Rack travel in mm : 7.20  
Tolerance mm : + 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : + 4.0

rack travel mm : 12.45  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1250

rack travel mm : 4.00  
Rated speed rpm : 1105

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 6.70

#### Testing:

Rated speed rpm : 400  
rack travel mm : 7.20  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 570  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 13.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 405  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 470  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 1045  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75

Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 400  
rack travel mm : 7.20  
Tolerance mm :  $\pm$  0.10

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.09.94  
Test oil : ISO 4113

Combination No. : 0400874255B

Injection pump  
Pump designation : PES4A95D410RS2685  
EP type number :

Governor  
Governor design. : RSV400...1000A1C2278  
: L  
Governor no. :

Cust. part No. : 9275740

Customer-spec. information  
Customer : LIEBHERR  
Motor : D904 T  
Power KW : 96.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Check electrically unlatched starting  
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 2.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.  
mm : 9.00  
Tolerance mm : ± 0.50  
Difference ° CS : 4.50  
Tolerance : ± 0.50

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

2nd speed rpm : 400

Rack travel in mm : 7.20  
Tolerance mm : + 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : + 4.0

rack travel mm : 12.45  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1250

rack travel mm : 4.00  
Rated speed rpm : 1105

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 6.70

##### Testing:

Rated speed rpm : 400  
rack travel mm : 7.20  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 570  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 500  
rack travel mm : 13.70  
Tolerance mm : + 0.20

Rated speed rpm : 1000  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 13.50

Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 405  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 470  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 1045  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75

A20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 400  
rack travel mm : 7.20  
Tolerance mm :  $\pm$  0.10

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
  
Combination No. : 0402648983  
  
Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0412628855  
  
Governor  
Governor design. : RQ300/950PA993-9  
Governor no. : 0421801755

Cust. part No. : 0250749202

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.25  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.33  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 481  
guide sleeve  
travel mm : 5.17  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 580  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1105  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 365  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.50

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500

rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 500

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure

hPa : 1200

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 950

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402646994

Injection pump  
Pump designation : PE6P120A32OLS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/950PA1032-13  
Governor no. : 0421801747

Cust. part No. : 0230744202

Customer spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.16  
Tolerance mm : ± 0.10

Rated speed rpm : 1009  
guide sleeve  
travel mm : 6.52  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 401  
guide sleeve  
travel mm : 4.53  
Tolerance mm : ± 0.10

Rated speed rpm : 500

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

rack travel mm : 13.40  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1200

##### LOW IDLE



control lever  
position degree : 73.0  
tolerance degré : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.30

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.45  
Tolerance mm : ± 0.10

#### START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 998

Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402646997

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQV300...950PA1033  
: -5  
Governor no. : 0421814008

Cust. part No. : 0230744302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

801

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1075

Rack travel in mm : 13.00  
Tolerance mm : ± 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

rack travel mm : 13.40  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1200

#### LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : ± 30

Rated speed rpm : 200

CRT mm min. : > 8.10

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 250  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.10

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  240  
Check  
speed 1/min :  $<$  260

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950

Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402648980

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0412628855

Governor  
Governor design. : RQV300...950PA797  
: -39  
Governor no. : 0421814115

Cust. part No. : 0250749102

---

Customer spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

B05

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1010  
guide sleeve  
travel mm : 8.56  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 617

guide sleeve  
travel mm : 5.23  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1030

Rack travel in mm : 14.20  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5



rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  8.50

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 500  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.11.94  
Test oil : ISO 4113  
Combination No. : 0402648984  
Injection pump  
Pump designation : PE8P120A32OLS7839  
: -10  
EP type number : 0412528855  
Governor  
Governor design. : RQ300/1050PA972-12  
Governor no. : 0421801759  
Cust. part No. : 0250749302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1417413047  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Tolerance l/h : ± 10.0  
Test nozzle holde  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Lube oil : 1409918004

B09

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 14.50  
Tolerance mm : ± 0.50  
Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1  
Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550  
Rack travel in mm : 15.20

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.94  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.34  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 4.51  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 570  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.20

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 15.20  
Tolerance mm : ± 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.15  
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 10.00  
Tolerance mm : ± 0.20

Pressure hPa : 500

rack travel mm : 11.75  
Tolerance mm : ± 0.20

#### START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 500  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.11.94  
Test oil : ISO 4113

Combination No. : 0403446164

Injection pump  
Pump designation : PES6MW100/320RS1016  
EP type number : 0413406010

Governor  
Governor design. : RGV300...1300MW25-4  
Governor no. : 0420083094

Cust. part No. :

Customer-spec. information  
Customer : RVI  
Motor : MIDR06.02-12  
Power KW : 113.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2417413033

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0681343009

Opening pressure  
bar : 174.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.38  
Tolerance mm : + 0.25

Rated speed rpm : 1384  
guide sleeve  
travel mm : 7.99  
Tolerance mm : + 0.25

Rated speed rpm : 898  
guide sleeve  
travel mm : 5.22  
Tolerance mm : + 0.25

Rated speed rpm : 345  
guide sleeve  
travel mm : 1.91  
Tolerance mm : + 0.25

Rated speed rpm : 395  
guide sleeve  
travel mm : 2.43  
Tolerance mm : + 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 3.05  
Tolerance mm : + 0.25

Rated speed rpm : 1770

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1300

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

control lever  
position degree : 119.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1375  
Tolerance 1/min : + 5

rack travel mm : -6.80  
Rated speed rpm : 1500  
Tolerance 1/min : + 15

rack travel mm : -10.30  
Tolerance mm : + 0.50  
Rated speed rpm : 1650

---

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0



### Testing:

Rated speed rpm : 300  
rack travel mm : -4.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm max. : < 3.20

---

### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 445

---

### TORQUE CONTROL

Rated speed rpm : 1300

Rated speed rpm : 900

---

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 700

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -0.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Pressure hPa : 143  
rack travel mm : -0.25  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 115  
rack travel mm : -0.65  
Tolerance mm :  $\pm$  0.15

---

### START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 230  
Check  
speed 1/min : < 250

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 84.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1375  
Tolerance 1/min :  $\pm$  5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.11.94

Test oil : ISO 4113

Combination No. : 0402648947B

## Injection pump

Pump designation : PE8P120A320LS7859

EP type number : 0412628869

## Governor

Governer design. : RQ300/950PA1032-5

Governer no. : 0421801668

Cust. part No. : 0230749602

## Customer-spec. information

Customer : MB-NFZ

Motor : OM442 LA

Power kW : 320.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

### Test nozzle holde assembly

: 1688901105

### Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30

Check tolerance °NW : ± 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 996  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 445

guide sleeve  
travel mm : 4.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 570  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1180  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200

---

## LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 435  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.00

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550

rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $>$  220  
Check  
speed 1/min :  $>$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.11.94  
Test oil : ISO 4113

Combination No. : 0402648947C

Injection pump  
Pump designation : PE8P120A320LS7859  
EP type number : 0412628869

Governor  
Governor design. : RQ300/950PA1032-12  
Governor no. : 0421801741

Cust. part No. : 0230749602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 996  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 445

guide sleeve  
travel mm : 4.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 570  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1180  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200



---

## LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 435  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.00

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550

rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $>$  220  
Check  
speed 1/min :  $>$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.11.94  
Test oil : ISO 4113

Combination No. : 0402648953B

Injection pump  
Pump designation : PE8P120A320LS7859  
EP type number : 0412628869

Governor  
Governor design. : RQV300...950PA1033  
: -10  
Governor no. : 0421814040

Cust. part No. : 0230749702

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

B25

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 617  
guide sleeve  
travel mm : 5.23  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1035

Rack travel in mm : 14.00  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm 0.75$   
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree :  $\pm 4.0$

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm 20$

Rated speed rpm : 200  
CRT mm min. :  $> 8.00$

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm 0.05$

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm 0.05$

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10

Tolerance mm :  $\pm 0.15$

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm :  $\pm 0.10$

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm :  $\pm 0.10$

---

#### START CUT-OUT

Rated speed rpm :  $> 100$   
Check  
speed 1/min :  $> 80$   
Rated speed rpm :  $< 220$   
Check  
speed 1/min :  $< 240$

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.5$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.5$

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$   
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.11.94  
Test oil : ISO 4113

Combination No. : 0402648983

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0412628855

Governor  
Governor design. : RQ300/950PA  
Governor no. : 0421801

Cust. part No. : 0250749202

Customer spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.22  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1002  
guide sleeve  
travel mm : 6.34  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 366  
guide sleeve  
travel mm : 3.66  
Tolerance mm :  $\pm$  0.10

CO2

Rated speed rpm : 500  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

##### LOW IDLE



control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.70

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500

rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 500

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure

hPa : 1200

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 950

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.11.94  
Test oil : ISO 4113

Combination No. : 0403476054

Injection pump  
Pump designation : PES6MW100/720RS1144  
EP type number : 0413406138

Governor  
Governor design. : RSV350...1200MWOA316  
: -7  
Governor no. : 0420085092

Cust. part No. : 0150747302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366A  
Power KW : 115.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### RATED SPEED

control lever  
position degree : 103.0  
tolerance degree : ± 4.0

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

rack travel mm : 4.00  
Rated speed rpm : 1340

rack travel mm : 11.00  
Rated speed rpm : 1248  
Tolerance 1/min : ± 8

#### LOW IDLE

##### Testing:

Rated speed rpm : 350  
rack travel mm : 7.30  
Tolerance mm : ± 0.30

rack travel mm : 2.00  
Rated speed rpm : 475  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 12.05  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.12.94  
Test oil : ISO 4113

Combination No. : 0401849738

Injection pump  
Pump designation : PE10P120A320LS3824  
: -10  
EP type number : 0411829701

Governor  
Governor design. : RQV300...1150PA867  
Governor no. : 0421813630

Cust. part No. : 0160743402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 423 LA  
Power kW : 386.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8  
: - 7- 6- 3- 5  
: - 2

Phasing : 0-45-72-117-144  
: -189-216-261-288  
: -333  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

2nd speed rpm : 300

Rack travel in mm : 5.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.50  
Tolerance mm : ± 0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 8.70  
Tolerance mm : ± 0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.50  
Tolerance mm : ± 0.10

Rated speed rpm : 1250

C09

guide sleeve  
travel mm : 9.80  
Tolerance mm : ± 0.20

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1185

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : ± 4.0

rack travel mm : 11.50  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1250  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree : ± 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. :  $>$  6.50

---

### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

---

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400

Pressure hPa : 390  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 450  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

---

### START CUT-OUT

Rated speed rpm :  $>$  100

C10

Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 450  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

### BREAKAWAY

Rack travel in mm : 11.50  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

### STARTING FUEL DELIVERY



Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.07.93  
Test oil : ISO 4113

Combination No. : 0402646784

Injection pump  
Pump designation : PE6P120A320LS7870  
EP type number : 0412626903

Governor  
Governor design. : RQV350...1050PA1082  
Governor no. : 0421814062

Cust. part No. : 0230748502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

C12

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.22  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1098  
guide sleeve  
travel mm : 9.45  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 403  
guide sleeve  
travel mm : 1.97  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 453

guide sleeve  
travel mm : 2.52  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 760  
guide sleeve  
travel mm : 4.82  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1320  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1210

Rack travel in mm : 10.80  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 104.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 10.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1160  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75

Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. :  $>$  8.40

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : 0.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 350  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $>$  100

C14

Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 800  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 10.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.09.93  
Test oil : ISO 4113

Combination No. : 0402646917X

Injection pump  
Pump designation : PE6P120A320LS7834  
: -10  
EP type number : 0412626853

Governor  
Governor design. : RQ300/950PA971  
Governor no. : 0421801543

Cust. part No. : 0180740402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.30  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.60  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1009  
guide sleeve  
travel mm : 6.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.60  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.50

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.30  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 15.30  
Tolerance mm : ± 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 550  
Pressure hPa : 1200  
rack travel mm : 15.30  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.25  
Tolerance mm : ± 0.15

Rated speed rpm : 550

Pressure hPa : 550  
rack travel mm : 12.90  
Tolerance mm : ± 0.05

Pressure hPa : 250

rack travel mm : 10.90  
Tolerance mm : ± 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100



Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.60  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.09.93

Test oil : ISO 4113

Combination No. : 0402646930X

Injection pump

Pump designation : PE6P120A320LS7834  
: -10

EP type number : 0412626853

Governor

Governer design. : RQ300/1050PA972-7

Governer no. : 0421801583

Cust. part No. : 0200744002

## Customer-spec. information

Customer : MB-NFZ

Motor : OM401 LA

Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-

: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.30  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.60  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1109  
guide sleeve  
travel mm : 6.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 510

guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 8.70

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.30  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 15.00  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 15.30  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 550  
Pressure hPa : 1200  
rack travel mm : 15.30  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.25  
Tolerance mm : + 0.15

Rated speed rpm : 550

Pressure hPa : 550  
rack travel mm : 12.90  
Tolerance mm : + 0.05

Pressure hPa : 250

rack travel mm : 10.90  
Tolerance mm : + 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.60  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.04.94  
Test oil : ISO 4113  
Combination No. : 0402646940X  
Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0412626854  
Governor  
Governor design. : RQ300/950PA971-9  
Governor no. : 0421801732

Cust. part No. : 0200742202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.20  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.40

##### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
 rack travel mm : 13.20  
 Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1400  
 rack travel mm : 13.20  
 Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.45  
 Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 350  
 rack travel mm : 12.00  
 Tolerance mm :  $\pm$  0.05

Pressure hPa : 200  
 rack travel mm : 11.00  
 Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 350  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 150.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
 hPa : 1400  
 Rated speed rpm : 800  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 204.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.20  
 Rated speed rpm : 998  
 Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 220.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
 rack travel mm : 5.60  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.09.93

Test oil : ISO 4113

Combination No. : 0402648898X

Injection pump  
Pump designation : PE8P120A320LS7838  
: -10

EP type number : 0412628854

Governor  
Governor design. : RQ300/950PA971-4  
Governor no. : 0421801558

Cust. part No. : 0200743402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1013  
guide sleeve  
travel mm : 6.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 102.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.30  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1150

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.80

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 600

Pressure hPa : 250  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.20

---

# LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	6.50
Tolerance mm	:	± 0.30
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	19.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 3.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 6.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.04.94  
Test oil : ISO 4113

Combination No. : 0402648900X

Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856

Governor  
Governor design. : RQ300/1050PA972-4  
Governor no. : 0421801560

Cust. part No. : 0190749802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 101.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.90

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.94  
Test oil : ISO 4113

Combination No. : 0402648901X

Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856

Governor  
Governor design. : RQV300...1050PA797  
: -21  
Governor no. : 0421813894

Cust. part No. : 0190749902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

D06

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700



Rack travel in mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1125

Rack travel in mm : 16.50  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

D07

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 88.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. : > 7.90

---

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 11.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.09.93  
Test oil : ISO 4113

Combination No. : 0402648906X

Injection pump  
Pump designation : PE8P120A320LS7838  
: -10  
EP type number : 0412628854

Governor  
Governor design. : RQ300/1050PA972-6  
Governor no. : 0421801569

Cust. part No. : 0200743602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1109  
guide sleeve  
travel mm : 6.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 490

guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1230  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10  
  
Rated speed rpm : 200  
  
CRT mm min. :  $>$  7.80

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05  
  
Rated speed rpm : 1050  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 600

Pressure hPa : 250  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

# LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	6.50
Tolerance mm	:	± 0.30
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	19.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 3.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 6.0
Speed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.09.93  
Test oil : ISO 4113

Combination No. : 0402648908X

Injection pump  
Pump designation : PE8P120A320LS7838  
: -10  
EP type number : 0412628854

Governor  
Governor design. : RQV300...950PA797  
: -23  
Governor no. : 0421813910

Cust. part No. : 0200743502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

D14

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 600



Rack travel in mm : 14.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.25  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.55  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 617

guide sleeve  
travel mm : 5.25  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.05  
Tolerance mm :  $\pm$  0.25

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1020

Rack travel in mm : 16.50  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 124.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.30  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.80

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 600

Pressure hPa : 250  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550  
rack travel mm : 12.65  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  240  
Check  
speed 1/min :  $<$  260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 995

Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.94  
Test oil : ISO 4113

Combination No. : 0402648909X

Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856

Governor  
Governor design. : RQ300/950PA971-6  
Governor no. : 0421801575

Cust. part No. : 0200748602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.45  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1150

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.60

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.94  
Test oil : ISO 4113

Combination No. : 0402648910X

Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856

Governor  
Governor design. : RQV300...950PA797  
: -26  
Governor no. : 0421813915

Cust. part No. : 0200748702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.26  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.27  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 575  
guide sleeve  
travel mm : 4.46  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 625

guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.16  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1103  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1200  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1020

Rack travel in mm : 16.50  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.45  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5



rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.50

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  240  
Check  
speed 1/min :  $<$  260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.94  
Test oil : ISO 4113

Combination No. : 0402648928B

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886

Governor  
Governor design. : RQ300/1050PA1030-9  
Governor no. : 0421801717

Cust. part No. : 0230741202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.93  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.84  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 732

guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 4.01  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 829  
guide sleeve  
travel mm : 6.38  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 1098

Tolerance 1/min :  $\pm$  8  
 rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1350

#### LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.50  
 Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
 Rated speed rpm : 420  
 Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.20

#### TORQUE CONTROL

Rated speed rpm : 550  
 rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
 rack travel mm : 14.05  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
 rack travel mm : 14.20  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 775  
 rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1200

rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.60  
 Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
 rack travel mm : 11.90  
 Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
 rack travel mm : 12.90  
 Tolerance mm :  $\pm$  0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 450  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 212.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 107.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.94  
Test oil : ISO 4113

Combination No. : 0402648928C

Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0412628885

Governor  
Governor design. : RQ300/1050PA1030-9  
Governor no. : 0421801717

Cust. part No. : 0230741202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.93  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.84  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 732

guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 4.01  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 829  
guide sleeve  
travel mm : 6.38  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 1098



Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min : + 15  
  
 rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1350

#### LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.50  
 Tolerance mm : + 0.10  
  
 rack travel mm : 2.00  
 Rated speed rpm : 420  
 Tolerance 1/min : + 20  
  
 Rated speed rpm : 200  
  
 CRT mm min. : > 7.20

#### TORQUE CONTROL

Rated speed rpm : 550  
 rack travel mm : 14.80  
 Tolerance mm : + 0.05  
  
 Rated speed rpm : 1050  
 rack travel mm : 14.05  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 950  
 rack travel mm : 14.20  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 775  
 rack travel mm : 14.80  
 Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1200

E03

rack travel mm : 14.80  
 Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.60  
 Tolerance mm : + 0.15  
  
 Rated speed rpm : 400  
  
 Pressure hPa : 300  
 rack travel mm : 11.90  
 Tolerance mm : + 0.15  
  
 Pressure hPa : 450  
 rack travel mm : 12.90  
 Tolerance mm : + 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 450  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 212.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 107.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed

Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm3/1000 strokes : 60.0  
Tolerance  
cm3/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm3/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 13.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.94  
Test oil : ISO 4113

Combination No. : 0402648929B

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886

Governor  
Governor design. : RQV300...950PA1033  
: -12  
Governor no. : 0421814093

Cust. part No. : 0230741402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

E05

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.49  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1012  
guide sleeve  
travel mm : 8.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1600  
guide sleeve  
travel mm : 24.06  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 589  
guide sleeve  
travel mm : 4.97  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 639  
guide sleeve  
travel mm : 5.51  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.48  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1045

Rack travel in mm : 13.00  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 998

Tolerance 1/min	:	±	8
rack travel mm	:		4.00
Rated speed rpm	:		1095
Tolerance 1/min	:	±	15
rack travel mm	:		0.75
Tolerance mm	:	±	0.75
Rated speed rpm	:		1350

#### LOW IDLE

control lever			
position degree	:		68.0
tolerance degree	:	±	4.0

#### Testing:

Rated speed rpm	:		300
rack travel mm	:		5.50
Tolerance mm	:	±	0.10
Rated speed rpm	:		200
CRT mm min.	:	>	7.60

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm	:		375
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#### TORQUE CONTROL

Rated speed rpm	:		550
rack travel mm	:		14.80
Tolerance mm	:	±	0.05

Rated speed rpm	:		950
rack travel mm	:		14.05
Tolerance mm	:	±	0.10

Rated speed rpm	:		900
rack travel mm	:		14.10
Tolerance mm	:	±	0.10

Rated speed rpm	:		875
rack travel mm	:		14.25
Tolerance mm	:	±	0.10

Rated speed rpm	:		800
rack travel mm	:		14.75
Tolerance mm	:	±	0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:		400
Pressure hPa	:		1200
rack travel mm	:		14.80
Tolerance mm	:	±	0.05

#### MEASUREMENT

Pressure hPa	:		-
Rated speed rpm	:		400
rack travel mm	:		10.60
Tolerance mm	:	±	0.20

Rated speed rpm	:		400
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Pressure hPa	:		300
rack travel mm	:		11.90
Tolerance mm	:	±	0.15

Pressure hPa	:		450
rack travel mm	:		12.90
Tolerance mm	:	±	0.10

#### START CUT-OUT

Rated speed rpm	:	>	100
Check			
speed 1/min	:	>	80
Rated speed rpm	:	<	220
Check			
speed 1/min	:	<	240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		450
Rated speed rpm	:		400
Del. quantity			
cm <sup>3</sup> /1000 strokes	:		166.0
Tolerance			
cm <sup>3</sup> /1000 strokes	:	±	1.5
Check tolerance			
cm <sup>3</sup> /1000S.	:	±	4.5

Aneroid pressure			
hPa	:		1200
Rated speed rpm	:		950
Del. quantity			
cm <sup>3</sup> /1000 strokes	:		214.0
Tolerance			
cm <sup>3</sup> /1000 strokes	:	±	2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : +- 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.30  
Tolerance mm : +- 0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed

EO8

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.12.94  
Test oil : ISO 4113

Combination No. : 0402648933

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886

Governor  
Governor design. : RQ300/950PA1031-14  
Governor no. : 0421801720

Cust. part No. : 0230742702

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Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

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## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

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(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

---

Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

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##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.62  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1009  
guide sleeve  
travel mm : 6.84  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 739

guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 443  
guide sleeve  
travel mm : 4.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 835  
guide sleeve  
travel mm : 6.38  
Tolerance mm :  $\pm$  0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 998



Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1085

Tolerance 1/min : + 15

rack travel mm : 0.75

Tolerance mm : + 0.75

Rated speed rpm : 1350

#### LOW IDLE

control lever  
position degree : 70.0

tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300

rack travel mm : 3.50

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 350

Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.50

#### TORQUE CONTROL

Rated speed rpm : 550

rack travel mm : 14.80

Tolerance mm : + 0.05

Rated speed rpm : 950

rack travel mm : 14.00

Tolerance mm : + 0.10

Rated speed rpm : 900

rack travel mm : 14.10

Tolerance mm : + 0.10

Rated speed rpm : 875

rack travel mm : 14.25

Tolerance mm : + 0.10

Rated speed rpm : 800

rack travel mm : 14.75

Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400

Pressure hPa : 1200

rack travel mm : 14.80

Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 400

rack travel mm : 10.60

Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 300

rack travel mm : 11.90

Tolerance mm : + 0.15

Pressure hPa : 450

rack travel mm : 12.90

Tolerance mm : + 0.10

#### START CUT-OUT

Rated speed rpm : > 100

Check  
speed 1/min : > 80

Rated speed rpm : < 220

Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 450

Rated speed rpm : 400

Del. quantity

cm<sup>3</sup>/1000 strokes : 166.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure

hPa : 1200

Rated speed rpm : 950

Del. quantity

cm<sup>3</sup>/1000 strokes : 214.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance

cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance		
cm <sup>3</sup> /1000S.	:	12.0
Aneroid pressure		
hPa	:	-
Rated speed rpm	:	400
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	107.0
Tolerance		
cm <sup>3</sup> /1000 strokes	: ±	1.0
Check tolerance		
cm <sup>3</sup> /1000S.	: ±	4.0
Spreed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	12.0

---

#### BREAKAWAY

Rack travel in mm	:	13.00
Rated speed rpm	:	998
Tolerance 1/min	: ±	8

---

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	210.0
Tolerance		
cm <sup>3</sup> /1000 strokes	: ±	15.0
Check tolerance		
cm <sup>3</sup> /1000S.	: ±	19.0

---

#### LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	5.70
Tolerance mm	: ±	0.30
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	13.0
Tolerance		
cm <sup>3</sup> /1000 strokes	: ±	3.0
Check tolerance		
cm <sup>3</sup> /1000S.	: ±	6.0
Spreed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.94  
Test oil : ISO 4113

Combination No. : 0402648935

Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856

Governor  
Governor design. : RQV300...950PA1033  
: -3  
Governor no. : 0421813997

Cust. part No. : 0230743502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity	
cm <sup>3</sup> /1000 strokes	: 212.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
<hr/>	
Speed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 6.50
Tolerance mm	: ± 0.30
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 13.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 6.0
Speed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.29
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 1011
guide sleeve	
travel mm	: 8.59
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 567
guide sleeve	
travel mm	: 4.66
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 617
guide sleeve	
travel mm	: 5.23
Tolerance mm	: ± 0.25

Rated speed rpm	: 780
guide sleeve	
travel mm	: 6.31
Tolerance mm	: ± 0.25

Rated speed rpm	: 1092
guide sleeve	
travel mm	: 10.00
Tolerance mm	: ± 0.25

Rated speed rpm	: 1190
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1080

Rack travel in mm	: 12.30
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 750
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 212.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
Speed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 122.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 12.45
Rated speed rpm	: 998
Tolerance 1/min	: ± 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1085
Tolerance 1/min	: ± 15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  8.40

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200

rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.94  
Test oil : ISO 4113  
  
Combination No. : 0402648937  
  
Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856  
  
Governor  
Governor design. : RGV300...1050PA1033  
: -4  
Governor no. : 0421814001  
  
Cust. part No. : 0230743702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	212.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	± 4.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm :	6.50
Tolerance mm :	± 0.30
Del. quantity	
cm <sup>3</sup> /1000 strokes :	13.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	± 3.0
Check tolerance	
cm <sup>3</sup> /1000S. :	± 6.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	8.0
Check tolerance	
cm <sup>3</sup> /1000S. :	12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 0.74
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 1110
guide sleeve	
travel mm	: 8.43
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 575
guide sleeve	
travel mm	: 4.52
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 625
guide sleeve	
travel mm	: 5.04
Tolerance mm	: ± 0.25

Rated speed rpm	: 830
guide sleeve	
travel mm	: 6.13
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1190
guide sleeve	
travel mm	: 10.00
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1290
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1190
<hr/>	
Rack travel in mm :	11.80
Tolerance mm :	± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 750
Del. quantity	
cm <sup>3</sup> /1000 strokes :	212.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	± 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	± 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 11.80
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1160
Tolerance 1/min	: ± 15



rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1300

#### LOW IDLE

control lever		
position degree	:	83.0
tolerance degree	:	+ 4.0

#### Testing:

Rated speed rpm	:	300
rack travel mm	:	6.50
Tolerance mm	:	+ 0.10

Rated speed rpm	:	200
CRT mm min.	:	> 9.40

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm	:	375
-----------------	---	-----

#### TORQUE CONTROL

Rated speed rpm	:	700
rack travel mm	:	13.45
Tolerance mm	:	+ 0.05

Rated speed rpm	:	1050
rack travel mm	:	12.80
Tolerance mm	:	+ 0.10

Rated speed rpm	:	900
rack travel mm	:	13.00
Tolerance mm	:	+ 0.05

Rated speed rpm	:	800
rack travel mm	:	13.45
Tolerance mm	:	+ 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	400
Pressure hPa	:	750
rack travel mm	:	13.45
Tolerance mm	:	+ 0.05

#### MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	400
rack travel mm	:	11.15
Tolerance mm	:	+ 0.15

Rated speed rpm	:	400
-----------------	---	-----

Pressure hPa	:	200
rack travel mm	:	11.60
Tolerance mm	:	+ 0.10

Pressure hPa	:	400
rack travel mm	:	12.40
Tolerance mm	:	+ 0.05

#### START CUT-OUT

Rated speed rpm	:	> 100
Check		
speed 1/min	:	> 80
Rated speed rpm	:	< 220
Check		
speed 1/min	:	< 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	400
Rated speed rpm	:	400
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	158.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 4.5

Aneroid pressure		
hPa	:	750
Rated speed rpm	:	1050
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	194.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 5.0
Speed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	12.0

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	137.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 11.80  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.06.94  
Test oil : ISO 4113  
  
Combination No. : 0402648938  
  
Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856  
  
Governor  
Governor design. : RQ300/1050PA1030-15  
Governor no. : 0421801736

Cust. part No. : 0230743602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

E21

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.82  
Tolerance mm : ± 0.10

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.71  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.35  
Tolerance mm : ± 0.10

Rated speed rpm : 811  
guide sleeve  
travel mm : 6.09  
Tolerance mm : ± 0.10

Rated speed rpm : 411

guide sleeve  
travel mm : 4.46  
Tolerance mm : ± 0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

Rated speed rpm : 873  
guide sleeve  
travel mm : 6.26  
Tolerance mm : ± 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

rack travel mm : 11.80  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.80

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 11.80  
Rated speed rpm : 1098  
Tolerance 1/min : +- 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.94  
Test oil : ISO 4113

Combination No. : 0402648945B

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886

Governor  
Governor design. : RQ300/1050PA1030-10  
Governor no. : 0421801718

Cust. part No. : 0230747802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.79  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.65  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 792

guide sleeve  
travel mm : 6.08  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 3.88  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 847  
guide sleeve  
travel mm : 6.23  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 1098



Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min : + 15  
 rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1300

#### LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.50  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 405  
 Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.10

#### TORQUE CONTROL

Rated speed rpm : 550  
 rack travel mm : 14.40  
 Tolerance mm : + 0.05

Rated speed rpm : 1050  
 rack travel mm : 14.05  
 Tolerance mm : + 0.10

Rated speed rpm : 950  
 rack travel mm : 14.20  
 Tolerance mm : + 0.10

Rated speed rpm : 800  
 rack travel mm : 14.40  
 Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1200

rack travel mm : 14.40  
 Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.60  
 Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 450  
 rack travel mm : 12.90  
 Tolerance mm : + 0.10

Pressure hPa : 300  
 rack travel mm : 11.90  
 Tolerance mm : + 0.15

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 450  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 212.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 107.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.01.95  
Test oil : ISO 4113  
  
Combination No. : 0400876428  
  
Injection pump  
Pump designation : PES6A95D410RS2839  
EP type number : 0410886894  
  
Governor  
Governor design. : RSV325...1200AOC816L  
Governor no. : 0420232614  
  
Cust. part No. : 0 423 1261 KY0150  
                  : -17

Customer-spec. information  
Customer : KHD  
Motor : BF6L913  
Power KW : 109.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1419992198  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 0681343009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1680750014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 2.65  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1200  
  
Rack travel in mm : 11.80  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm3/1000 strokes : 72.0  
  
Tolerance  
cm3/1000 strokes : ± 1.0  
  
Check tolerance  
cm3/1000S. : ± 3.0  
  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : ± 4.0

rack travel mm : 10.80  
Rated speed rpm : 1245  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Tolerance %/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

rack travel mm : 4.00  
Rated speed rpm : 1340

LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 6.50

Testing:

Rated speed rpm : 325  
rack travel mm : 7.00  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 410  
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 11.85  
Tolerance mm : ± 0.05

BREAKAWAY

Rack travel in mm : 10.80  
Rated speed rpm : 1245  
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 7.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.05.94  
Test oil : ISO 4113

Combination No. : 0402648936

Injection pump  
Pump designation : PE8P120A320LS7840  
: -10  
EP type number : 0412628856

Governor  
Governor design. : RQ300/950PA1032-14  
Governor no. : 0421801749

Cust. part No. : 0230743402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

F04

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.18  
Tolerance mm : ± 0.10

Rated speed rpm : 1004  
guide sleeve  
travel mm : 6.36  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 409  
guide sleeve  
travel mm : 4.79  
Tolerance mm : ± 0.10

Rated speed rpm : 500

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : ± 4.0

rack travel mm : 12.45  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  8.80

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 750  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $>$  220

Check  
speed 1/min :  $>$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 750  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100



Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402046861  
  
Injection pump  
Pump designation : PE6P110A320RS3329  
EP type number : 0412016743  
  
Governor  
Governor design. : RQ325/1300PA1150  
Governor no. : 0421801716

Cust. part No. : 1284420/3

## Customer-spec. information

Customer : DAF  
Motor : NS156M  
Power KW : 156.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 7.5
2nd speed rpm	: 325
Rack travel in mm	: 5.20
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 26.0
Tolerance	
cm3/1000 strokes	: + 2.5
Check tolerance	
cm3/1000S.	: + 5.0
Spread	
Tolerance	
cm3/1000 strokes	: 12.0
Check tolerance	
cm3/1000S.	: 15.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 325
guide sleeve	
travel mm	: 1.99
Tolerance mm	: + 0.10
Rated speed rpm	: 1351
guide sleeve	
travel mm	: 6.37
Tolerance mm	: + 0.10
Rated speed rpm	: 1300
guide sleeve	
travel mm	: 6.00
Tolerance mm	: + 0.10
Rated speed rpm	: 427
guide sleeve	
travel mm	: 3.54
Tolerance mm	: + 0.10
Rated speed rpm	: 590
guide sleeve	
travel mm	: 6.00

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Tolerance mm	: + 0.10
Rated speed rpm	: 1570
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 650
Rack travel in mm	: 20.00
Tolerance mm	: + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 144.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 7.5

RATED SPEED

control lever	
position degree	: 93.0
tolerance degree	: + 4.0
rack travel mm	: 10.85
Rated speed rpm	: 1345
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1450
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1600

LOW IDLE

control lever	
position degree	: 72.0
tolerance degree	: + 4.0

### Testing:

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10  
  
rack travel mm : 2.00  
Rated speed rpm : 415  
  
Rated speed rpm : 225  
  
CRT mm min. :  $>$  5.90

### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05  
  
Rated speed rpm : 700  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05  
  
Rated speed rpm : 1300  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 7.35  
Tolerance mm :  $\pm$  0.20  
  
Rated speed rpm : 600  
  
Pressure hPa : 370  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05  
  
Pressure hPa : 200  
rack travel mm : 8.40  
Tolerance mm :  $\pm$  0.10

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 98.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

### BREAKAWAY

Rack travel in mm : 10.85  
Rated speed rpm : 1345  
Tolerance 1/min :  $\pm$  5

### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402646752  
  
Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0412626854  
  
Governor  
Governor design. : RQ300/1050PA1030-26  
Governor no. : 0421801775

Cust. part No. : 0260742602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.61  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.37  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 431

guide sleeve  
travel mm : 4.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 95.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.40

---

## TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300

rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

## BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402646753  
  
Injection pump  
Pump designation : PE6P120A32OLS7836  
: -10  
EP type number : 0412626854  
  
Governor  
Governor design. : RQV300...1050PA1065  
: -3  
Governor no. : 0421814142  
  
Cust. part No. : 0260742802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

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Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

---

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.13  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1108  
guide sleeve  
travel mm : 9.81  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 370  
guide sleeve  
travel mm : 2.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 420

guide sleeve  
travel mm : 2.49  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.87  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1310  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1220

Rack travel in mm : 11.40  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 101.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75

Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.70

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.45

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Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

# BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

# STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

# LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402646755  
  
Injection pump  
Pump designation : PE6P120A320LS7836-2  
EP type number : 0412626944  
  
Governor  
Governor design. : RGV300...1050PA1033  
                  : -20  
Governor no. : 0421814140  
  
Cust. part No. : 0260742702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power Kw : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance l/h : ± 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004

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Test Lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 6- 3- 5- 2- 4-  
                  : 1-  
  
Phasing : 0-60-120-180-240  
          : -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050  
  
Rack travel in mm : 12.40

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1107  
guide sleeve  
travel mm : 8.52  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608  
guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820  
guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1150

Rack travel in mm : 11.40  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.60

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.95  
Test oil : ISO 4113  
Combination No. : 0402646757  
Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0412626854  
Governor  
Governor design. : RQ300/1050PA1030-25  
Governor no. : 0421801771

Cust. part No. : 0260743002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 95.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.60

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 300  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm3/1000 strokes : 150.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm3/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550  
Del. quantity  
cm3/1000 strokes : 189.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0

Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 127.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 210.0  
Tolerance  
cm3/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm3/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 19.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.95  
Test oil : ISO 4113

Combination No. : 0402646758

Injection pump  
Pump designation : PE6P120A32OLS7834  
: -10

EP type number : 0412626853

Governor  
Governor design. : RQ300/1050PA1030-24  
Governor no. : 0421801770

Cust. part No. : 0260743302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 213.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.20  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 7.00  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.78  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.69  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 818

guide sleeve  
travel mm : 6.09  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 410  
guide sleeve  
travel mm : 4.39  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 889  
guide sleeve  
travel mm : 6.26  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.20  
Rated speed rpm : 1098

Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : + 15  
 rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

#### LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.70  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 400  
 Tolerance 1/min : + 20

Rated speed rpm : 200  
 CRT mm min. : > 7.90

#### TORQUE CONTROL

Rated speed rpm : 1050  
 rack travel mm : 14.20  
 Tolerance mm : + 0.05

Rated speed rpm : 550  
 rack travel mm : 14.20  
 Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
 Pressure hPa : 800  
 rack travel mm : 14.20  
 Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.50

G01

Tolerance mm : + 0.15  
 Rated speed rpm : 400  
 Pressure hPa : 200  
 rack travel mm : 11.65  
 Tolerance mm : + 0.20  
 Pressure hPa : 350  
 rack travel mm : 13.10  
 Tolerance mm : + 0.20

#### START CUT-OUT

Rated speed rpm : > 100  
 Check  
 speed 1/min : > 80  
 Rated speed rpm : < 220  
 Check  
 speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 350  
 Rated speed rpm : 400  
 Del. quantity  
 cm3/1000 strokes : 150.0  
 Tolerance  
 cm3/1000 strokes : + 1.5  
 Check tolerance  
 cm3/1000S. : + 4.5

Aneroid pressure  
 hPa : 800  
 Rated speed rpm : 550  
 Del. quantity  
 cm3/1000 strokes : 197.0  
 Tolerance  
 cm3/1000 strokes : + 3.0  
 Check tolerance  
 cm3/1000S. : + 6.0  
 Speed  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm3/1000 strokes : 127.0  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 4.0  
 Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.20  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402646759  
  
Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0412626854  
  
Governor  
Governor design. : RQV300...1050PA1033  
: -19  
Governor no. : 0421814137  
  
Cust. part No. : 0260743102

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power kW : 200.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance l/h : ± 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004

G03

Test lines : 1680750075  
  
Outside diameter : 8.0  
  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 6- 3- 5- 2- 4-  
: 1-  
  
Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

## BASIC SETTING

Rated speed rpm : 1050

---

Rack travel in mm : 13.00  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1155

Rack travel in mm : 12.00  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

G04

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  7.60

---

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400  
Pressure hPa : 200  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.20

---

##### START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550

Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646764

Injection pump  
Pump designation : PE6P120A320LS7837-2  
EP type number : 0412626943

Governor  
Governor design. : RQ300/1050PA972-13  
Governor no. : 0421801767

Cust. part No. : 0260742402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.94  
Tolerance mm : ± 0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.34  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 441  
guide sleeve  
travel mm : 4.85  
Tolerance mm : ± 0.10

Rated speed rpm : 570

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree : ± 4.0

rack travel mm : 14.10  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  8.50

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400  
Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 1098

Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646765

Injection pump  
Pump designation : PE6P120A320LS7837  
: -10  
EP type number : 0412626855

Governor  
Governor design. : RQV300...1050PA797  
: -43  
Governor no. : 0421814134

Cust. part No. : 0260742502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

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Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

---

Rack travel in mm : 15.10  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1108  
guide sleeve  
travel mm : 8.54  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608

guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820  
guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1140

Rack travel in mm : 14.10  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.60

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646766

Injection pump  
Pump designation : PE6P120A320LS7837  
: -10  
EP type number : 0412626855

Governor  
Governor design. : RQ300/950PA993-11  
Governor no. : 0421801766

Cust. part No. : 0260742302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.28  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.34  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 340

guide sleeve  
travel mm : 3.46  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 580  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1105  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.50

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550

rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646767

Injection pump  
Pump designation : PE6P120A320LS7837  
: -10  
EP type number : 0412626855

Governor  
Governor design. : RGV300...950PA797  
: -42  
Governor no. : 0421814133

Cust. part No. : 0260741502

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10

Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 617  
guide sleeve  
travel mm : 5.23  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1040

Rack travel in mm : 14.10  
Tolerance mm :  $\pm$  1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1100  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  8.50

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646993A

Injection pump  
Pump designation : PE6P120A320LS7852-1  
EP type number : 0412626910

Governor  
Governor design. : RQ300/1050PA1030-18  
Governor no. : 0421801746

Cust. part No. : 0230744502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.50

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0





# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113  
Combination No. : 0403276008  
Injection pump  
Pump designation : PES6MW100/720RS1517  
: -2  
EP type number : 0413206019  
Governor  
Governor design. : RSV350...1300MWOA354  
Governor no. : 0420085227  
Cust. part No. : 0250740502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 177.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Set pneumatic shutoff device to  
control-rod stop = 0.5...1.5 mm  
control-rod travel at 4.5 bar  
atmospheric pressure.

Test hydr. locking device for starting  
with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

H02

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### RATED SPEED

control lever  
position degree : 104.0  
tolerance degree : ± 4.0

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1600

rack travel mm : 4.00  
Rated speed rpm : 1465

rack travel mm : 13.40  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.00

##### Testing:

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 14.40  
Tolerance mm : ± 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 800  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 450  
rack travel mm : 1.90  
Tolerance mm :  $\pm$  0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 46.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

Rack travel in mm : 14.80

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.82  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.68  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 832  
guide sleeve  
travel mm : 6.09  
Tolerance mm :  $\pm$  0.10

H05

Rated speed rpm : 421  
guide sleeve  
travel mm : 4.03  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 893  
guide sleeve  
travel mm : 6.26  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00

Rated speed rpm : 1195  
 Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1300

#### LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.20  
 Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
 Rated speed rpm : 405  
 Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
 CRT mm min. :  $>$  7.00

#### TORQUE CONTROL

Rated speed rpm : 550  
 rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
 rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
 rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1000  
 rack travel mm : 14.80  
 Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400

H06

rack travel mm : 10.80  
 Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
 rack travel mm : 12.90  
 Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
 rack travel mm : 14.15  
 Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  100  
 Check  
 speed 1/min :  $>$  80  
 Rated speed rpm :  $<$  220  
 Check  
 speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 400  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 158.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
 hPa : 1000  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 229.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 134.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## Note remarks

Edition : 27.01.95  
Test oil : ISO 4113

Injection pump  
Pump designation : PE6P120A32OLS7834  
                      : -10  
EP type number   : 0412626853

Governor  
Governor design. : RQ300/1050PA1031-19  
Governor no. : 0421801768

Cust. part No. : 0260743802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar :  $\pm$  0.1

Tolerance l/h :  $\pm 10.0$

Test nozzle holde  
assembly : 1688901105

Opening pressure : 208.5  
bar  
Tolerance bar :  $\pm$  1.5

Lube oil : 1409918004

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

Test pressure bar : 31.0  
Tolerance bar :  $\pm$  1.0

Prestroke mm	:	5.55
Tolerance mm	:	+ 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm :  $\pm 0.50$

Firing order : 6- 3- 5- 2- 4-  
: 1-

```
Phasing      : 0-60-120-180-240
              : -300-360
Tolerance    : + 0.30
Check
tolerance °NW : + 0.75
```

Time to cyl. no. : 6

Rated speed rpm : 550

Rack travel in mm : 14.80



Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.82  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.68  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 832  
guide sleeve  
travel mm : 6.09  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 421  
guide sleeve  
travel mm : 4.03  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 893  
guide sleeve  
travel mm : 6.26  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00

Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15  
  
rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  5.30

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400

H10

rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646762

Injection pump  
Pump designation : PE6P120A320LS7834  
: -10  
EP type number : 0412626853

Governor  
Governor design. : RQV300...1050PA1033  
: -18  
Governor no. : 0421814136

Cust. part No. : 0260743602

Customer spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

H12

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1108  
guide sleeve  
travel mm : 8.53  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608

guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820  
guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1145

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.00

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402646763  
  
Injection pump  
Pump designation : PE6P120A320LS7834  
: -10  
EP type number : 0412626853  
  
Governor  
Governor design. : RQV300...1050PA1065  
: -2  
Governor no. : 0421814135  
  
Cust. part No. : 0260743702

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1417413047  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Tolerance l/h : + 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Lube oil : 1409918004

H16

Test lines : 1680750075  
  
Outside diameter : 8.0  
  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550



Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1108  
guide sleeve  
travel mm : 9.82  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 370  
guide sleeve  
travel mm : 2.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 420

guide sleeve  
travel mm : 2.49  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.87  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1310  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 104.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75

Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  8.10

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646768

Injection pump  
Pump designation : PE6P120A320LS7837  
: -10  
EP type number : 0412626855

Governor  
Governor design. : RQ300/950PA971-12  
Governor no. : 0421801765

Cust. part No. : 0260741302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

H2O

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.72  
Tolerance mm : ± 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.34  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 429  
guide sleeve  
travel mm : 4.46  
Tolerance mm : ± 0.10

Rated speed rpm : 580

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree : ± 4.0

rack travel mm : 14.10  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1108  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 435  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 200  
CRT mm min. :  $>$  8.60

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  190  
Check  
speed 1/min :  $>$  170  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 998

Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95

Test oil : ISO 4113

Combination No. : 0402646772A

Injection pump

Pump designation : PE6P120A320LS7846

EP type number : 0412626865

Governor

Governer design. : RQ300/1050PA1030-21

Governer no. : 0421801758

Cust. part No. : 0250747102

## Customer-spec. information

Customer : MB-NFZ

Motor : OM441 LA

Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly

: 1688901105

Opening pressure  
bar

: 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550



Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

H25

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.80

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 540  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.20

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050

Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.01.95  
Test oil : ISO 4113

Combination No. : 0402646773A

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...1050PA1033  
Governor no. : 0421814120

Cust. part No. : 0250747202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1135

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

J01

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. : > 7.00

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80

Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 540  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread

Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000s. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646786A

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...1050PA1065  
Governor no. : 0421814053

Cust. part No. : 0240747802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80



Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

J05

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever  
position degree : 104.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.10

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80

Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 700  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000

J06

Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646787A

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1031-12  
Governor no. : 0421801681

Cust. part No. : 0240743102

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

## BASIC SETTING

Rated speed rpm : 1050

---

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 93.0

tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1098

Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180

Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75

Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 72.0

tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.60

Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 420

Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.20

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40

Tolerance mm :  $\pm$  0.05

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 250  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.15

---

## START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm3/1000 strokes : 119.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm3/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm3/1000 strokes : 164.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0

Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 135.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 210.0  
Tolerance  
cm3/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm3/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 19.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646788A

Injection pump  
Pump designation : PE6P120A32OLS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1031-11  
Governor no. : 0421801680

Cust. part No. : 0240740302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power Kw : 200.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.00  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : ± 4.0

rack travel mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 5.10

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
rack travel mm : 13.00  
Tolerance mm : ± 0.10

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646793B

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1030-11  
Governor no. : 0421801728

Cust. part No. : 0230749502

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 213.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.20  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 7.00  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.90

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm3/1000 strokes : 150.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm3/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550  
Del. quantity  
cm3/1000 strokes : 197.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0

Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 127.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 13.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 210.0  
Tolerance  
cm3/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm3/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 19.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646794A

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQV300...1050PA1033  
: -9  
Governor no. : 0421814028

Cust. part No. : 0230749402

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 200.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.00



Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1155

Rack travel in mm : 12.00  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. : > 7.60

---

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 13.00

Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402646795A  
  
Injection pump  
Pump designation : PE6P120A320LS7858-1  
EP type number : 0412626911  
  
Governor  
Governor design. : RQV300...1050PA1033  
                  : -8  
Governor no. : 0421814027  
  
Cust. part No. : 0230749002

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance L/h : ± 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004

Test lines : 1680750075  
  
Outside diameter : 8.0  
  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 6- 3- 5- 2- 4-  
                  : 1-  
  
Phasing : 0-60-120-180-240  
          : -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050  
  
Rack travel in mm : 12.40

Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1150

Rack travel in mm : 11.40  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. : > 7.60

---

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40

Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646796A

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1030-12  
Governor no. : 0421801729

Cust. part No. : 0230749302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050



Rack travel in mm : 13.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 95.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.60

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 800  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm3/1000s. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646797A

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1030-13  
Governor no. : 0421801730

Cust. part No. : 0230748902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 95.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.40

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646799A

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/950PA1031-5  
Governor no. : 0421801657

Cust. part No. : 0230744402

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

K11

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550



Rack travel in mm : 15.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

K12

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1105  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.50

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
 rack travel mm : 15.10  
 Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1100  
 rack travel mm : 15.10  
 Tolerance mm : ± 0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 9.15  
 Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 150  
 rack travel mm : 10.05  
 Tolerance mm : ± 0.20

Pressure hPa : 550  
 rack travel mm : 13.85  
 Tolerance mm : ± 0.20

---

##### START CUT-OUT

Rated speed rpm : > 100  
 Check  
 speed 1/min : > 80  
 Rated speed rpm : < 220  
 Check  
 speed 1/min : < 240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 550  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
 hPa : 1100  
 Rated speed rpm : 950

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 240.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 135.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

---

##### BREAKAWAY

Rack travel in mm : 14.10  
 Rated speed rpm : 998  
 Tolerance 1/min : ± 8

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 235.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 20.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 24.0

---

##### LOW IDLE

Rated speed rpm : 300  
 rack travel mm : 6.20  
 Tolerance mm : ± 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646976A

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1031  
Governor no. : 0421801642

Cust. part No. : 0230740902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.30

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.80

Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed

Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95

Test oil : ISO 4113

Combination No. : 0402646977A

## Injection pump

Pump designation : PE6P120A320LS7846

EP type number : 0412626865

## Governor

Governer design. : RQ300/1050PA1030-14

Governer no. : 0421801731

Cust. part No. : 0230741002

## Customer-spec. information

Customer : MB-NFZ

Motor : OM401 LA

Power KW : 230.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

### Test nozzle holde assembly

: 1688901105

### Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : ± 0.30

Check  
tolerance °Nw : ± 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80



Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.00

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.80

Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402646983A

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...1050PA1033  
: -2  
Governor no. : 0421813994

Cust. part No. : 0230741102

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm <sup>3</sup> /1000 strokes	: 230.0
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
<hr/>	
Spread Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 6.30
Tolerance mm	: ± 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	: 13.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1145
<hr/>	
Rack travel in mm	: 13.80
Tolerance mm	: ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 550
Aneroid pressure hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 230.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0

Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

---

RATED SPEED

control lever position degree	: 121.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 13.80
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1195
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.75
Tolerance mm	: ± 0.75
Rated speed rpm	: 1300

---

LOW IDLE

control lever position degree	: 66.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 300
rack travel mm	: 5.20
Tolerance mm	: ± 0.10

Rated speed rpm	: 200
CRT mm min.	: > 7.00

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 350
-----------------	-------

---

TORQUE CONTROL

Rated speed rpm	: 550
rack travel mm	: 14.80
Tolerance mm	: ± 0.05

Rated speed rpm	: 1050
rack travel mm	: 14.80

Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 700  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000

Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm3/1000S. : + 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646996A

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/1050PA1031-4  
Governor no. : 0421801656

Cust. part No. : 0230744702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10



Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
Tolerance mm :  $\pm$  0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  3.10

---

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050

rack travel mm : 15.10  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm : ± 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm : ± 0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm : ± 0.20

---

##### START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0

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Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646997A

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQV300...950PA1033  
: -5  
Governor no. : 0421814008

Cust. part No. : 0230744302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

L03

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
Tolerance mm : ± 0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1040

Rack travel in mm : 14.10  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

rack travel mm : 14.10  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1100  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > 8.50

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 950  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100

L05

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0402646998A

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQV300...1050PA1033  
: -6  
Governor no. : 0421814009

Cust. part No. : 0230744602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

L07

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550



Rack travel in mm : 15.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1140

Rack travel in mm : 14.10  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

L08

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.10  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.60

##### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402648955B

Injection pump  
Pump designation : PE8P120A320LS7859  
EP type number : 0412628869

Governor  
Governor design. : RQ300/950PA1031-9  
Governor no. : 0421801675

Cust. part No. : 0240740502

---

Customer spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 1.0

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

---

## BASIC SETTING

Rated speed rpm : 550

---

Rack travel in mm : 15.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.30

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 550  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402648981

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0412628855

Governor  
Governor design. : RQ300/950PA971-10  
Governor no. : 0421801754

Cust. part No. : 0250749002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20



Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.25  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.33  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 4.72  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 580  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 102.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1105  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 425  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.20

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500

rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 500

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure

hPa : 1200

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 950

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

# BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  5

---

# STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

# LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.01.95  
Test oil : ISO 4113

Combination No. : 0402648985

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0412628855

Governor  
Governor design. : RQ300/1050PA993-10  
Governor no. : 0421801760

Cust. part No. : 0250749502

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

---

## BASIC SETTING

Rated speed rpm : 550

---

Rack travel in mm : 15.20

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.85  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.34  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 271  
guide sleeve  
travel mm : 1.33  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.50

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500

rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 500

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1200

Rated speed rpm : 1050

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

# BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  5

---

# STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

# LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.01.95  
Test oil : ISO 4113

Combination No. : 0402648987

Injection pump  
Pump designation : PE8P120A320LS7838  
: -10  
EP type number : 0412628854

Governor  
Governor design. : RQV300...950PA1199  
: -2  
Governor no. : 0421814144

Cust. part No. : 0250746202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

L23

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550



Rack travel in mm : 15.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1012  
guide sleeve  
travel mm : 8.60  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 617

guide sleeve  
travel mm : 5.23  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1045

Rack travel in mm : 14.00  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1105  
Tolerance 1/min : +- 15  
  
rack travel mm : 0.75  
Tolerance mm : +- 0.75  
Rated speed rpm : 1200

#### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : +- 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 4.50  
Tolerance mm : +- 0.10  
  
Rated speed rpm : 200  
  
CRT mm min. : > 7.00

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm : +- 0.05  
  
Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm : +- 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm : +- 0.05

#### MEASUREMENT

Rated speed rpm : 400  
  
Pressure hPa : -  
rack travel mm : 9.10

Tolerance mm : +- 0.15  
  
Pressure hPa : 550  
rack travel mm : 13.70  
Tolerance mm : +- 0.15

#### START CUT-OUT

Rated speed rpm : > 190  
Check  
speed 1/min : > 170  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402648991A

Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0412628885

Governor  
Governor design. : RQ300/1050PA1030-22  
Governor no. : 0421801763

Cust. part No. : 0250747402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.00

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  7.10

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 13.85

Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.15

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : > 220  
Check  
speed 1/min : > 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 450  
Rated speed rpm : 400  
Del. quantity  
cm3/1000 strokes : 198.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm3/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm3/1000 strokes : 217.0

Tolerance  
cm3/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm3/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 144.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 210.0  
Tolerance  
cm3/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm3/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 13.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402648992

Injection pump  
Pump designation : PE8P120A320LS7839-1  
EP type number : 0412628902

Governor  
Governor design. : RQV300...1050PA1033  
Governor no. : 0421814145

Cust. part No. : 0250747502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.00



Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (8) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1110  
guide sleeve  
travel mm : 8.58  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608  
guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820  
guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1140

Rack travel in mm : 12.70  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.30

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 13.65  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.20

M05

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 450  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113

Combination No. : 0402648993

Injection pump  
Pump designation : PE8P120A320LS7838  
: -10  
EP type number : 0412628854

Governor  
Governor design. : RQ300/950PA971-11  
Governor no. : 0421801764

Cust. part No. : 0260740202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.72  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.34  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 451

guide sleeve  
travel mm : 4.76  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 580  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1100  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200

---

## LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 200

CRT mm min. :  $>$  9.00

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 550

rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

---

## START CUT-OUT

Rated speed rpm :  $>$  190  
Check  
speed 1/min :  $>$  170  
Rated speed rpm :  $>$  220  
Check  
speed 1/min :  $>$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.01.95  
Test oil : ISO 4113  
  
Combination No. : 0402666803  
  
Injection pump  
Pump designation : PE6P120A320/3LS7883  
EP type number : 0412626938  
  
Governor  
Governor design. : RSV600...1050POA592  
Governor no. : 0421833458

Cust. part No. : 0220743802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0



Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 600

Rack travel in mm : 3.80  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 3.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 88.0  
tolerance degree : +- 4.0

##### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : +- 4.0

##### Testing:

Rated speed rpm : 600  
rack travel mm : 3.80  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 630  
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 13.20  
Tolerance mm : +- 0.05

Rated speed rpm : 700  
rack travel mm : 13.20  
Tolerance mm : +- 0.10

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 600  
rack travel mm : 3.80  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.02.95  
Test oil : ISO 4113  
Combination No. : 0400463155  
Injection pump  
Pump designation : PES3A80D410/3RS1350  
EP type number : 0410483023  
Governor  
Governor design. : RSV325...1175A8C2223  
                  : -1L  
Governor no. : 0420232483  
Cust. part No. :

Customer-spec. information  
Customer : KHD  
Motor : F3L912 \*  
Power KW : 38.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0681343009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 1.95  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 3- 2  
Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1175  
Rack travel in mm : 10.15  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

2nd speed rpm : 325

Rack travel in mm : 6.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

##### RATED SPEED

control lever  
position degree : 106.0  
tolerance degree : ± 4.0

rack travel mm : 9.10  
Rated speed rpm : 1220  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1260  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1425

rack travel mm : 4.00  
Rated speed rpm : 1265

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.50

##### Testing:

Rated speed rpm : 325  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 485  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### TORQUE CONTROL

Dimension a mm : 0.85

Rated speed rpm : 1175  
rack travel mm : 10.15  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.10

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1175  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### BREAKAWAY

Rack travel in mm : 9.10  
Rated speed rpm : 1220  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.80  
Tolerance mm :  $\pm$  0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Speed

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.02.95  
Test oil : ISO 4113

Combination No. : 0402646748

Injection pump  
Pump designation : PE6P120A320LS7834  
: -10  
EP type number : 0412626853

Governor  
Governor design. : RQ300/1050PA1030-27  
Governor no. : 0421801777

Cust. part No. : 0260744202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.78  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.51  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 421

guide sleeve  
travel mm : 4.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 6.80

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 14.80  
Tolerance mm : ± 0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 14.80  
Tolerance mm : ± 0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.30  
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 13.35  
Tolerance mm : ± 0.20

Pressure hPa : 540

rack travel mm : 14.20  
Tolerance mm : ± 0.20

---

## START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY



Rack travel in mm : 13.80  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.02.95  
Test oil : ISO 4113

Combination No. : 0402646754

Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0412626854

Governor  
Governor design. : RQ300/1050PA1031-22  
Governor no. : 0421801773

Cust. part No. : 0260742902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.61  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.37  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 431

guide sleeve  
travel mm : 4.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 93.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.10

---

## TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 200  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300

rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.95  
Test oil : ISO 4113

Combination No. : 0402646996

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/1050PA1031-4  
Governor no. : 0421801656

Cust. part No. : 0230744702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.36  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 365

guide sleeve  
travel mm : 3.79  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 490  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1250  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  5.70

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 250

rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.10

---

## START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY



Rack travel in mm : 13.40  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.95

Test oil : ISO 4113

Combination No. : 0402648799

## Injection pump

Pump designation : PE8P120A320LS7847-2

EP type number : 0412628885

## Governor

Governer design. : RQ300/1050PA1030-28

Governer no. : 0421801778

Cust. part No. : 0260744102

## Customer-spec. information

Customer : MB-NFZ

Motor : OM442 LA

Power KW : 280.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

### Test nozzle holde

assembly : 1688901105

### Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.00

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.94  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.84  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 732  
guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.10

N02

Rated speed rpm : 426  
guide sleeve  
travel mm : 4.29  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 828  
guide sleeve  
travel mm : 6.38  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00

Rated speed rpm : 1180  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1350

#### LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.50  
 Tolerance mm :  $\pm$  0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 415  
 Tolerance 1/min :  $\pm$  20  
 Rated speed rpm : 200  
 CRT mm min. :  $>$  7.10

#### TORQUE CONTROL

Rated speed rpm : 550  
 rack travel mm : 14.00  
 Tolerance mm :  $\pm$  0.05  
 Rated speed rpm : 1050  
 rack travel mm : 13.30  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 850  
 rack travel mm : 13.65  
 Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1200  
 rack travel mm : 14.00  
 Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400

rack travel mm : 9.20  
 Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400  
 Pressure hPa : 300  
 rack travel mm : 11.05  
 Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
 rack travel mm : 12.40  
 Tolerance mm :  $\pm$  0.15

#### START CUT-OUT

Rated speed rpm :  $>$  100  
 Check  
 speed 1/min :  $>$  80  
 Rated speed rpm :  $>$  220  
 Check  
 speed 1/min :  $>$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 450  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 198.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 217.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 144.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.95  
Test oil : ISO 4113  
  
Combination No. : 0402648974  
  
Injection pump  
Pump designation : PE8P120A320LS7875  
EP type number : 0412628881  
  
Governor  
Governor design. : RQ250/1150PA1122  
Governor no. : 0421801704

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : V2-8TC

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004  
  
Test Lines : 1680750089  
  
Outside diameter : 8.0

N05

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.20  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 16.00  
Tolerance mm : ± 1.50  
  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 1150  
  
Rack travel in mm : 13.60  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 7.0
Check tolerance	
cm3/1000S.	: 10.0
2nd speed rpm	: 300
Rack travel in mm	: 5.80
Tolerance mm	: + 0.20
Del. quantity	
cm3/1000 strokes	: 18.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.39
Tolerance mm	: + 0.10
Rated speed rpm	: 1207
guide sleeve	
travel mm	: 6.36
Tolerance mm	: + 0.10
Rated speed rpm	: 650
guide sleeve	
travel mm	: 6.00
Tolerance mm	: + 0.10
Rated speed rpm	: 382
guide sleeve	
travel mm	: 5.26
Tolerance mm	: + 0.10
Rated speed rpm	: 450
guide sleeve	
travel mm	: 6.00

N06

Tolerance mm	: + 0.10
Rated speed rpm	: 1370
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 208.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 7.0
Check tolerance	
cm3/1000S.	: 10.0

RATED SPEED

control lever	
position degree	: 34.0
tolerance degree	: + 4.0
control lever	
position degree	: 95.0
tolerance degree	: + 4.0
rack travel mm	: 12.60
Rated speed rpm	: 1202
Tolerance 1/min	: + 8
rack travel mm	: 4.00
Rated speed rpm	: 1280
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1350

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 375  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  9.20

#### TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 650  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 250  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

Rated speed rpm :  $>$  205  
Check  
speed 1/min :  $>$  185  
Rated speed rpm :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 12.60  
Rated speed rpm : 1202  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.20



Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.95

Test oil : ISO 4113

Combination No. : 0402648992

## Injection pump

Pump designation : PE8P120A32OLS7847-2

EP type number : 0412628885

## Governor

Governer design. : RQV300...1050PA1033

: -21

Governer no. : 0421814145

Cust. part No. : 0250747502

## Customer-spec. information

Customer : MB-NFZ

Motor : OM442 LA

Power KW : 280.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

### Test nozzle holde

assembly : 1688901105

### Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.00

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1110  
guide sleeve  
travel mm : 8.58  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608  
guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820  
guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1140

Rack travel in mm : 12.70  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.30

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 13.65  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.20

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 450  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.02.95  
Test oil : ISO 4113  
  
Combination No. : 0402648995  
  
Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0412628885  
  
Governor  
Governor design. : RQV300...950PA1168  
                  : -4  
Governor no. : 0421814130  
  
Cust. part No. : 0250749602

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Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004  
  
Test lines : 1680750075

N13

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

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(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

---

Rated speed rpm : 550  
  
Rack travel in mm : 14.80

Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

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##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.49  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1012  
guide sleeve  
travel mm : 8.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 589  
guide sleeve  
travel mm : 4.97  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 639  
guide sleeve  
travel mm : 5.51  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.48  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1035

Rack travel in mm : 13.00  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 123.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  5.50

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 875  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 450  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed



Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 16.02.95  
Test oil : ISO 4113

Combination No. : 0402648997

Injection pump  
Pump designation : PE8P120A320LS7838  
: -10  
EP type number : 0412628854

Governor  
Governor design. : RQ300/950PA993-12  
Governor no. : 0421801776

Cust. part No. : 0260740402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 1.0

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.14  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 414

guide sleeve  
travel mm : 4.91  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 355  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.70

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550

rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

---

#### START CUT-OUT

Rated speed rpm :  $>$  100

Check

speed 1/min :  $>$  80

Rated speed rpm :  $<$  220

Check

speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.95

Test oil : ISO 4113

Combination No. : 0402736810

## Injection pump

Pump designation : PES6P110A120RS7213

EP type number : 0412716804

## Governor

Governer design. : RQV400...1250PA964

: -2K

Governer no. : 0421815254

Cust. part No. : 3921777

## Customer-spec. information

Customer : CDC

Motor : 6BTA-A

Power KW : 141.0

## TEST BENCH REQUIREMENTS

### Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

### Overflow quantity

min. l/h : 120

Tolerance l/h : ± 5.0

### Test nozzle holde assembly

: 1688901101

### Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

S.o.d. blocking

Barrel no. : 1

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.23

---

### BASIC SETTING

Rated speed rpm : 1250

---

Rack travel in mm : 14.85  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### RATED SPEED

control lever  
position degree : 63.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.80  
Rated speed rpm : 1300  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1475  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1600

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 15.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 275

CRT mm min. :  $>$  7.20

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 14.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1200  
rack travel mm : 14.85  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 1250  
  
Pressure hPa : 690  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 365  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.05

---

##### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  290  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 161.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1300  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.95  
Test oil : ISO 4113

Combination No. : 0403244044

Injection pump  
Pump designation : PES4MW100/320RS1521  
EP type number : 0413204020

Governor  
Governor design. : RQV400...1200MW147  
Governor no. : 0420083320

Cust. part No. : 51.11103-7412

Customer-spec. information  
Customer : SNF  
Motor : D0824 LFLO4  
Power KW : 81.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 8.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

Set pneumatic shutoff device to  
control-rod stop = 0.5...1.5 mm  
control-rod travel at 4.5 bar  
atmospheric pressure.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.95  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 132.0

Tolerance  
cm3/1000 strokes :  $\pm$  1.0

Check tolerance  
cm3/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

2nd speed rpm : 400

Rack travel in mm : 4.00  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm3/1000 strokes : 15.0

Tolerance  
cm3/1000 strokes :  $\pm$  2.0

Check tolerance  
cm3/1000S. :  $\pm$  4.5

Spreed  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 400  
guide sleeve  
travel mm : 1.55  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1253  
guide sleeve  
travel mm : 9.86  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 848  
guide sleeve  
travel mm : 5.69  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 448  
guide sleeve  
travel mm : 2.05  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 498

guide sleeve  
travel mm : 2.59  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.30  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1500  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00  
Tolerance mm :  $\pm$  2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 800

Del. quantity  
cm3/1000 strokes : 132.0  
Tolerance

cm3/1000 strokes :  $\pm$  1.0  
Check tolerance

cm3/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 10.90  
Rated speed rpm : 1253  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1325  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1450

---

## LOW IDLE

control lever  
position degree : 77.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 400  
rack travel mm : 4.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300

CRT mm min. :  $>$  5.50

---

## TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.95  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 900  
rack travel mm : 11.95  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 11.95  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 11.95  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 400  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 250

rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

---

## START CUT-OUT

Rated speed rpm :  $>$  200  
Check

speed 1/min :  $>$  180

Rated speed rpm :  $<$  300

Check  
speed 1/min :  $<$  320

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800

Rated speed rpm : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 800

Rated speed rpm : 650

Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

## BREAKAWAY

Rack travel in mm : 10.90

Rated speed rpm : 1253

Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 4.00  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5